the subject with an open mind will, it is believed, find in these pages a consistent and natural theory of the imaginary. Many problems however still require to be worked out and the subject offers a wide field for further investigations."

Contents—I: Imaginary points and lengths on real straight lines, Imaginary straight lines, Properties of semi-real figures, 1–40; II: The circle with a real branch, The conic with a real branch, 41–69; III: Angles between imaginary straight lines, Measurement of imaginary angles and of lengths on imaginary straight lines, Theorems connected with projection, 70–124; IV: The general conic, 125–140; V: The imaginary conic, 141–163; VI: Tracing of conics and straight lines, 164–195; VII: The imaginary in space, 196–212; Index of Theorems, 213–215; Index of terms and definitions, 216.

Aeronautics, A Class Text. By EDWIN BIDWELL WILSON. New York, Wiley, 1920. 8vo. 8 + 265 pages. Price $4.00.

Preface: "For several years I have been giving, at the Massachusetts Institute of Technology, courses of lectures on those portions of dynamics, both rigid and fluid, which are fundamental in aeronautical engineering. The more elementary parts of these courses, covering about ninety out of one hundred fifty lectures, are found in this book. Although it has been customary to teach the two subjects of rigid and of fluid dynamics in parallel or in rapid alternation, so that they are both developed as needed for each other and for the accompanying courses on airplane and airship design, it has seemed better in making a presentation in book form to separate them. The student should have completed Chaps. IX–XII of the fluid mechanics before undertaking the latter part of Chap. VI.

"A number of topics which might well be included in a work on aeronautics have been omitted from the book, as they are from my lectures, because they can be taken up so much better in the parallel courses on design. In the preparation of the selected material I have had constantly in mind my own experience and needs relative to effective classroom instruction, particularly in the matter of lists of exercises. Although my students are supposed to have completed thorough courses in calculus, including the elements of differential equations, and in theoretical and applied mechanics, it has seemed better to assume too little, rather than too much, as retained in usable form. I hope, therefore, that with the present interest in aeronautics in particular, and in applied mathematics in general, this work may prove stimulating to other than technical students of aeronautical engineering.

"Nobody can issue a book on aeronautics at this time without lamenting the fact that much, if not most, of the progress in theory which has been made during the war, particularly in England, has not yet been released for publication. To wait, however, until its release and subsequent digestion would mean a long delay. Indeed from one viewpoint no time is more appropriate for the printing of these elementary, introductory, and orienting lectures than just now when there impends a deluge of material for advanced study . . ."

Contents: *Introduction*—I. Mathematical preliminaries; 3–10; II. The pressure on a plane, 11–21; III. The skeleton airplane, 22–36. *Rigid Mechanics*—IV. Motion in a resisting medium, 37–56; V. Harmonic motion, 57–80; VI. Motion in two dimensions, 81–106; VII. Motion in three dimensions, 107–121; VIII. Stability of the airplane, 122–151. *Fluid Mechanics*—IX. Motion along a tube, 152–164; X. Planar motion, 165–181; XI. Theory of dimensions, 182–198; XII. Forces on an airplane, 199–217; XIII. Stream function, velocity potential, 218-235; XIV. Motion of a body in a liquid, 236–250; XV. Motion in three dimensions, 251–262. *Index*—263-265.

How to make and use Graphic Charts. By A. C. HASKELL, with an introduction by R. T. Dana. New York, Codex Book Co., 1919. 8vo. 7 + 539 pp.

Contents: Introduction, 1–7; Rectilinear charts, 8–11; Logarithmic charts, 12–16; Semi-logarithmic charts, 17–24; Polar charts, 25–26; Geometric charts, 27–29; Trilinear charts, 30–36; Nomographic or alignment charts, 37–53; General principles pertaining to the use of charts, 54–77; Organization and management charts, 78–167; Cast and cast analysis charts, 168–228; Scheduling and progress charts, 229–261; Operating characteristics, 262–308; Charts showing the results of tests and experiments, 309–325; Trends, tendencies and statistical prediction shown by charts, 326–341; Computation, arithmetical and geometrical, by charts, 342–444; Charts as an aid to designing and estimating, 445–508; Miscellaneous uses of charts, 509–534; Index, 535–539.